

Listing of Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Please cancel claims 1-27 without prejudice or disclaimer.

Claims 1-27 (Cancelled).

28. (New) A hybrid compressor device for a vehicle, the hybrid compressor device comprising:

a rotation member rotated by an exterior driving source;

a motor rotated by electric power;

a compressor for compressing refrigerant in a refrigerant cycle system, the compressor being operated by at least one of driving force of the rotation member and driving force of the motor; and

a transmission mechanism connected respectively independently to a rotational shaft of the rotation member, a rotational shaft of the motor and a rotational shaft of the compressor, the transmission mechanism being provided for changing a rotational speed of the rotation member and a rotational speed of the motor, to be transmitted to the compressor, wherein:

the rotation member, the motor and the compressor are disposed to be rotatable independently; and

the rotational speed of the compressor is changed by adjusting the rotational speed of the motor with respect to the rotational speed of the rotation member.

29. (New) The hybrid compressor device according to claim 28, wherein
the transmission mechanism is a planetary gear including a sun gear, a planetary
carrier and a ring gear; and

the rotational shafts of the rotation member, the motor and the compressor are
connected to the sun gear, the planetary carrier and the ring gear.

30. (New) The hybrid compressor device according to claim 29, wherein the rotational
shaft of the compressor is connected to the planetary carrier.

31. (New) The hybrid compressor device according to claim 30, wherein:

the rotational shaft of the rotation member is connected to the sun gear; and

the rotational shaft of the motor is connected to the ring gear.

32. (New) The hybrid compressor device according to claim 29, wherein:

the rotational shaft of the rotation member is connected to the planetary carrier;

the rotational shaft of the motor is connected to the sun gear; and

the rotational shaft of the compressor is connected to the ring gear.

33. (New) The hybrid compressor device according to claim 28, further comprising:

an interrupter for interrupting driving force from the exterior driving source to the
rotation shaft of the rotation member by the control unit; and

a one-way clutch disposed near the transmission mechanism between the transmission mechanism and the interrupter in an axial direction of the rotation shaft of the rotation member, for allowing the rotational shaft of the rotation member to only rotate in one rotational direction of the rotation member; and

when the exterior driving source is operated, the compressor is operated by turning off the interrupter and by driving the motor in a rotational direction opposite to the one rotational direction of the rotation member.

34. (New) The hybrid compressor device according to claim 29, wherein the rotational shaft of the rotation member is connected to the planetary carrier, the hybrid compressor device further comprising:

a one-way clutch for allowing the rotational shaft of the motor to only rotate in a rotational direction opposite to a rotational direction of the rotation member.

35. (New) The hybrid compressor device according to claim 34, wherein:

the rotational shaft of the motor is connected to the sun gear; and

the rotational shaft of the compressor is connected to the ring gear.

36. (New) The hybrid compressor device according to claim 28, wherein:

the motor includes a rotor portion; and

the transmission mechanism is disposed in the rotor portion.

37. (New) The hybrid compressor device according to claim 28, further comprising:

a lock mechanism for locking the rotational shaft of the motor when the motor is stopped; and

a detecting member for detecting fluctuation of an induced voltage of the motor, wherein,

when the compressor is operated by driving force of the rotation member while the motor is stopped, the detecting member detects the fluctuation of the induced voltage of the motor by detecting leakage fluctuation of magnetic flux of the motor generated due to rotation of the transmission mechanism connected to the compressor.

38. (New) The hybrid compressor device according to claim 37, wherein:

the motor is a surface permanent-magnet motor which includes a rotor portion and permanent magnets on an outer periphery of the rotor portion;

the transmission mechanism, connected to the compressor, includes at least a pair of a recess portion and a protrusion portion at a center side with respect to the permanent magnets in a radial direction of the rotor portion; and

the pair of the recess portion and the protrusion portion is provided to generate the leakage fluctuation of the magnetic flux of the motor.

39. (New) The hybrid compressor device according to claim 37, wherein:

the transmission mechanism is a planetary gear including a sun gear, a planetary carrier and a ring gear; and

the ring gear is connected to the compressor.

40. (New) The hybrid compressor device according to claim 39, wherein:

the rotational shaft of the rotation member is connected to the planetary carrier; and

the rotational shaft of the motor is connected to the sun gear.

41. (New) The hybrid compressor device according to claim 37, further comprising:

an interrupter for interrupting driving force from the exterior driving source to the rotation shaft of the rotation member by the control unit; and

when the fluctuation of the induced voltage of the motor is smaller than a predetermined value, the interrupter is turned off by the control unit.